

CV

Ornob Alam

Email: oa832@nyu.edu; ornobalam@icddrb.org

Education

New York University, New York, NY, USA

Ph.D., Biology, August 2019- Present

Thesis Advisor: Michael Purugganan

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Sc.M. , Molecular Microbiology & Immunology, 2015

Thesis Advisor: Sabra Klein

Florida State University, Tallahassee, FL, USA

B.Sc., Biological Science, 2013

Employment History

International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), Dhaka, Bangladesh
Scientific Writer (remote), March 2022- Present

New York University, New York, USA

Graduate Teaching Assistant

a. Applied Genomics, January 2022- May 2022

b. Principles of Biology I, September 2020- December 2020

Nature Portfolio, Springer Nature, New York, USA

Editorial Fellow, June 2021- August 2021

Independent University, Bangladesh, Dhaka, Bangladesh

January 2016- August 2019

a. Lecturer, School of Life Sciences. Primarily:

 Microbiology

Immunology

Introductory Biology

Readings in Biochemistry

b. Research Associate, Center for Health, Population, and Development

Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

Research Associate, Sabra Klein's Lab, September 2014- May 2015

Research

Michael Purugganan's Lab at NYU, May 2020- Present

Studying the demographic and adaptive history of domesticated Asian rice (*Oryza sativa*), using next-generation sequencing and population genetics methods

Center for Health, Population, and Development (CHPD), Independent University, Bangladesh, January 2016- August 2019

Wrote research grants and ethics proposals for large-scale epidemiological studies, and contributed to study and questionnaire design

Sabra Klein's Lab at Johns Hopkins, January 2014- May 2015

Investigated the effects of testosterone on the outcome of influenza infections in a mouse model

David Gilbert's Lab at Florida State University, January 2012- May 2013

Performed molecular cloning of a gene relevant to the study of replication timing in embryonic stem cells

Academic Publications

Alam O, Yusuf R, Rahman O. The Impact of Partition on East Pakistan: Toward a More Nuanced Central Narrative. In *The 1947 Partition of British India: Forced Migration and Its Reverberations*, edited by Jennifer Leaning and Shubhangi Bhadada, pg. 129-156. 2022; SAGE Spectrum, ISBN-10: 9354792901

Khanna T... Alam O et al. Crowdsourcing Memories: Process of Narrative Collection of the Survivors of Partition. In *The 1947 Partition of British India: Forced Migration and Its Reverberations*, edited by Jennifer Leaning and Shubhangi Bhadada, pg. 103-128. 2022; SAGE Spectrum, ISBN-10: 9354792901

Choy JY... Alam O, Purugganan MD et al. Ancestral polymorphisms shape the adaptive radiation of *Metrosideros* across the Hawaiian Islands. *Proceedings of the National Academy of Sciences*. 2021, 118 (37) e2023801118; DOI: 10.1073/pnas.2023801118

Alam O, Gutaker RM, Wu CC... Purugganan MD et al. Genome analysis traces regional dispersal of rice in Taiwan and Southeast Asia. *Molecular Biology & Evolution*. 2021; msab209, <https://doi.org/10.1093/molbev/msab209>

Yeboah G... Alam O et al. Analysis of OpenStreetMap Data Quality at Different Stages of a Participatory Mapping Process: Evidence from Slums in Africa and Asia. *ISPRS International Journal of Geo-Information*. 2021; 10(4):265. <https://doi.org/10.3390/ijgi10040265>

Improving Health in Slums Collaborative. A protocol for a multi-site, spatially-referenced household survey in slum settings: methods for access, sampling frame construction, sampling, and field data collection. *BMC Med Res Methodol*. 2019;19(1):109. doi:10.1186/s12874-019-0732-x

Vom Steeg LG... Alam O, Klein SL et al. Age and testosterone mediate influenza pathogenesis in male mice. *Am J Physiol Lung Cell Mol Physiol*. 2016;311(6):L1234–L1244. doi:10.1152/ajplung.00352.2016

Conference Talks & Posters

Alam O... Purugganan MD et al. Genome analysis traces regional dispersal of rice in Taiwan and Southeast Asia. Talk. *Evolution*. 2022

Alam O... Purugganan MD et al. Genome analysis traces regional dispersal of rice in Taiwan and Southeast Asia. Talk. *Society for Molecular Biology and Evolution Meeting*. 2021

Alam O... Klein SL et al. Testosterone Protects Young and Old Male Mice Against Influenza A Virus Infection. Poster. 8th Annual Research on Aging Showcase Poster Competition, Johns Hopkins Bloomberg School of Public Health. 2015

Alam O & Gilbert DM. Is Late Replication Necessary for G9a-Mediated Methylation to Occur? Talk. Undergraduate Research and Creative Activities Awards Symposium, Florida State University. 2012

Science Communication

Research Highlights. Nature Genetics. August & September 2021

Genomic windows into ancient climate change. Molecular Ecologist. 2021

More in Molecular Ecologist: <https://www.molecular ecologist.com/?s=ornob+alam>

Unbraiding the Neanderthal knot in human evolutionary history. Nature Ecology & Evolution Community. 2022

More in Nature Ecology & Evolution Community: <https://ecoevocommunity.nature.com/users/ornob-alam>

Unmasking an ancient scourge. Small Things Considered. 2021

Research highlights and explainers for icddr,b. Example:

icddr,b scientists help reveal a striking geographical pattern of influenza virus epidemics in Bangladesh. 2022

Designed, curated, and edited a blog featuring science communication articles by undergraduates in the (then) School of Life Sciences at Independent University, Bangladesh, March 2017- March 2019

<http://herebedragonssls.blogspot.com>

Honors & Awards

Eugene Bell Award at the New York University Biology Graduate program. 2021

Quantitative Biological Systems Training (QBIST) Grant, NIH Project Number: 1T32GM132037-01. 2020

1st place winner (Student category) of 8th Annual Research on Aging Showcase Poster Competition. 2015

Undergraduate Research and Creative Activities Award. 2012

Service & Mentorship

Facilitator, Respect is a Part of Research (RPR) Workshop, New York University. 2020 & 2022

RPR is a peer-to-peer workshop for first-year PhD students in the Biology department that serves as a space for open discussions on the best steps to take in a situation in which members may experience or witness disrespectful behavior

Mentor, Summer Undergraduate Research Program (SURP), June 2021- August 2021

Designed and supervised a project on visualizing and analyzing human ancient genetic data, led by talented (then) undergraduate Temima Yellin over the summer and the subsequent academic year

Skills

R

R Shiny. Example: paleoRice

Python

Bash scripting

Building bioinformatics pipelines using Nextflow

Next-generation sequencing and genomic analyses:

a, DNA extractions from herbarium/historical specimens

b, Library prep

c. Variant calling

Population genetics methods and analyses:

a. Population structure analyses and clustering

- b. Admixture graph modeling
- c. Estimating population size and separating history
- d. Coalescent and forward simulations
- e. Demographic inference
- f. Approximate Bayesian computation (ABC)
- g. Ancestral recombination graph inference
- h. Selection scans and analyses